INCIDENTALOMA

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Definition An asymptomatic adrenal mass detected on imaging not performed for suspected adrenal disease is termed an inciden taloma. The aetiology includes benign and malignant tumours of the cortex and medulla or of extra-adrenal origin. These tumours can be either non-functioning (silent) or functioning (secreting excess hormones). Incidence Autopsy studies suggest a prevalence of clinically inapparent adrenal masses of the order of 2%, which increases with age. Radiological incidentalomas are seen in about 3% of scans at the age of 50, rising to 10% in the elderly . Investigation Incidentaloma embraces all adrenal pathology and so the steps to management are described here and the detail for each pathology will follow in the individual sections of the chapter. A clear evidence-based algorithm for assessing patients with adrenal incidentaloma has been derived (Figure 57.2 The following should be assessed in parallel: Harvey Williams Cushing , 1869–1939, Professor of Surgery , Harvard University Medical School, Boston, MA, USA. Sir Godfrey Newbold Hounsfield , 1919–2004, British electrical engineer, won the 1979 Nobel Prize in Physiology or Medicine for helping to develop the diagnostic imaging technique known as X-ray computed tomography . Cushing’s syndrome and virilising tumours are associated with higher rates of malignancy (50% and 30%, respec - tively). The optimal way to determine malignancy is by means of a non-contrast computed tomography (CT) scan and measurement of the density of the lesion b y Hounsfield units (HU). Benign tumours are low density (≤ 10 /uni00A0 HU). In cases of uncertainty , consideration is given to fluorodeoxyglucose (FDG)–positron emission tomogra - - phy (PET) scanning, magnetic resonance imaging (MRI) with chemical shift or contrast CT and measurement of washout. Radiological findings suspicious of malignancy are shown in Summary box 57.1 . /uni25CF Is the tumour functionally active? This is deter - mined by: /uni25CF Clinical assessment /uni25CF 1 /uni00A0 mg overnight dexamethasone suppression test (DST) /uni25CF Measurement of plasma or urinary metanephrines /uni25CF Plasma aldosterone–renin ratio (ARR) /uni25CF Sex hormones and steroid precursors Summary box 57.1 Radiological features suspicious of adrenal malignancy /uni25CF). /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF Management All patients should be discussed in a multidisciplinary setting. Small (<40 /uni00A0 mm), benign non-functioning tumours do not require surgery , but patients should undergo a follow-up CT/MRI at 6 months. There is no consensus about follow-up beyond that period. However, there is evidence that a tumour >30 /uni00A0 mm has an increased risk of developing hyperfunction over time. Adrenalectomy is the standard of care for patients with unilateral tumours causing hormone excess. Adrenalectomy is recommended for all tumours >40 /uni00A0 mm in diameter, tumours showing imaging characteristics of malignancy and tumours sho wing significant growth. Laparoscopic adrenalectomy is recommended for unilat - eral adrenal masses with radiological findings suspicious of malignancy and a diameter <60 /uni00A0 mm, but without evidence of local invasion. Open adrenalectomy is recommended for unilateral adrenal masses with radiological findings suspicious of malignancy . An individualised approac h is required for patients whose tumours fall outside the above categories.

Unilateral adrenal mass Radiological suspicion of malignancy No Yes Functioning Local tumour? invasion No Yes No Yes No surgery Laparoscopic Diameter Open adrenalectomy ≤ 6 cm? adrenalectomy No Individualised surgical approach Figure 57.2 Algorithm for the investigation of adrenal incidentaloma. (After Fassnacht M, Arlt W, Bancos I et al . Management of adrenal incidentalomas: European Society of Endocrinology Clinical Practice Guideline in collaboration with the European Network for the Study of Adrenal Tumors. Eur J Endocrinol 2016; 175 (2): G1–G34.) Diameter >40 /uni00A0 mm and >10 /uni00A0 HU density Contrast-enhanced washout CT Relative <40% Absolute <60% MRI chemical shift: no change in signal intensity on out-of- phase imaging FDG-PET: positive uptake Yes

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Revision #1
Created 2025-12-31 15:21:17 UTC by Omar Ayman
Updated 2025-12-31 15:21:17 UTC by Omar Ayman